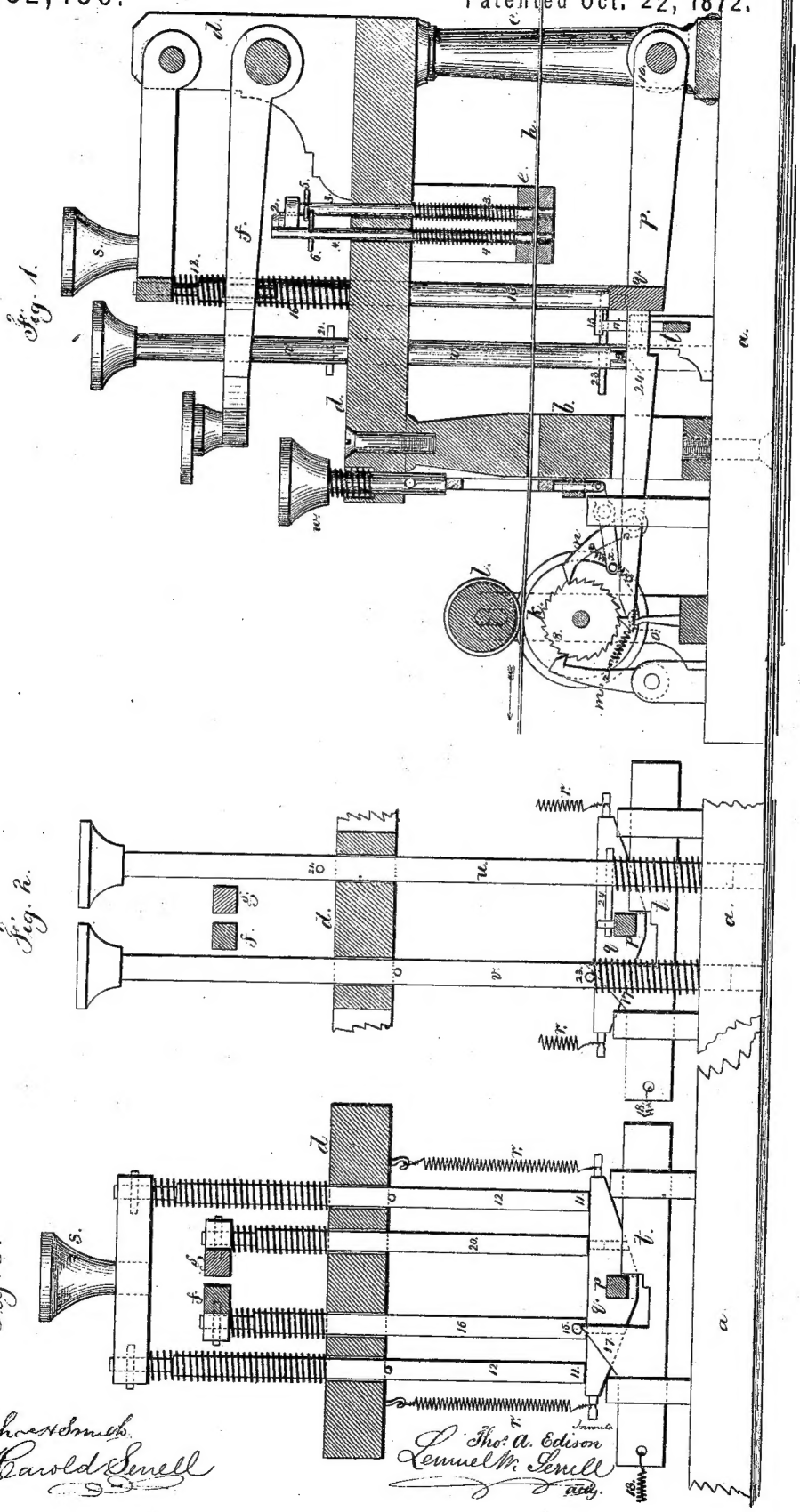
2 Sheets--Sheet 1.

T. A. EDISON.

Improvement in Apparatus for Perforating Paper for Telegraphic Use.

No. 132,456. Patented Oct. 22, 1872.



Witnesses:
Chas. H. Smith
Harold Sewell

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Attys.

2 Sheets--Sheet 2.

T. A. EDISON.

Improvement in Apparatus for Perforating Paper for Telegraphic Use.

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Fig. 5.

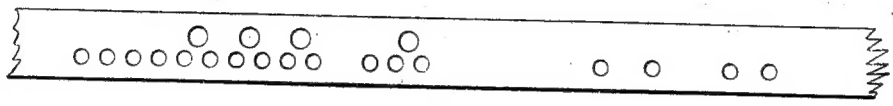
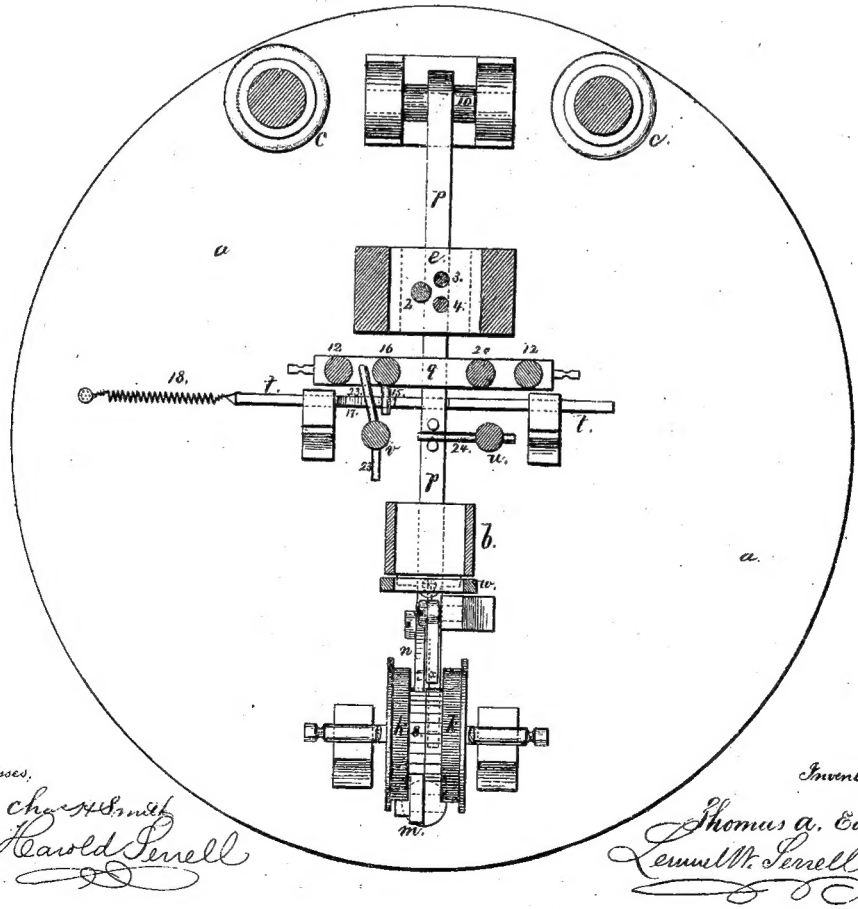


Fig. 4.



Witnesses,
Chas. H. Smith
Harold Serrell

Inventor.
Thomas A. Edison
Lemuel W. Serrell
atty.

UNITED STATES PATENT OFFICE.

THOMAS A. EDISON, OF NEWARK, NEW JERSEY, ASSIGNOR TO HIMSELF AND GEORGE HARRINGTON, OF WASHINGTON, D. C.

IMPROVEMENT IN APPARATUS FOR PERFORATING PAPER FOR TELEGRAPHIC USE.

Specification forming part of Letters Patent No. **132,456**, dated October 22, 1872.

To all whom it may concern:

Be it known that I, THOMAS A. EDISON, of Newark, in the county of Essex and State of New Jersey, have invented an Improvement in Telegraphic Perforating-Machines, and the following is declared to be a correct description of the said invention.

The strip of paper is perforated by this machine for use in transmitting telegraphic messages. The machine is made with keys that perforate either a single dot or three openings to form a dash, one of the three openings being larger than the others so as to produce a longer pulsation. The paper is fed the proper distance each perforation, and word-spaces, pauses, and sentence-spaces are produced by keys, and these keys are arranged in a small compass, and the instrument is compact, cheap, and adapted to local offices or to individual use.

In the drawing, Figure 1 is a vertical section centrally of the machine and in line with the strip of paper; Fig. 2 is an elevation of the spacing-bars for words and sentences; Fig. 3 is an elevation of the spacing-bars for the letters and pauses; Fig. 4 is a sectional plan at the plane of the paper; and Fig. 5 shows a piece of the perforated paper.

The bed *a* carries the standards *b c* and frame *d*. The die *e* is made with three openings, as in Fig. 4, for the three punches 2 3 4 that are raised by springs and depressed by the key-lever *f* so as to punch the three holes at once, or when the key-lever *g* is depressed only the punch 4 is moved. In Fig. 1 it will be seen that the lever *f*, acting on the upper end of 2, carries that down, and by the arm 5 and pin 6 the punches 3 and 4 are also moved, but the pin 6 being below the arm 5 the punch 4 can be moved down separately. The perforation from the punches 2, 3, and 4 represents a dash, and in consequence of the punch 2 being the largest it removes sufficient paper to insure a metallic contact of the brush or transmitting-stylus between one of the smaller perforations and the other, thereby producing a dash-mark. Upon each depression of the key *f* or *g* the paper-feeding mechanism is operated so that as the key is raised the feed takes place sufficiently to produce the required space between one letter and the next. The paper *h* passes above the die *e* and through the slotted standard *b* between the feed-roller *k* and holding-roller *l*. The roller *k* is made with the ratchet-teeth 8 in the middle, and *m* is the stop-pawl; *n*, the actuating-pawl on the lever *p*; and *o* is the stop or blocking pawl on the lever *p* taking the second range of reverse ratchet-teeth. The lever *p* has its fulcrum at 10, and receives more or less vibration according to the amount that the paper is to be fed. The yoke *q* and springs *r* serve to raise the lever *p* to its full height, as determined by the stops 11 on the rods 12, and these rods 12 extend to the key *s* that gives motion to the lever *p* sufficient to space off between one word and the next, as at a pause. The movement of the lever *p* is arrested by the notched slide *t*, see Fig. 3, and this slide *t* is moved endwise to bring a deeper notch below the lever *p* and allow greater motion when the dash key-lever *f* is depressed, because the pin 15 upon the slide-rod 16 running down the incline 17 on *t* moves the same endwise against the action of the spring 18, when the said key-lever *f* is struck. When the dot key-lever *g* is struck the slide 20 moves the lever *p* and feeds the paper the same distance as when the space-key *s* is depressed. The slide *u*, with a knob at its upper end, has a movement limited by the stop 21 and by the pin 24, moves the lever *p* and paper only a short distance, sufficient to separate one word from another, but the slide *v* with its pin 23 acting upon the incline 17, and also upon the yoke *q* of the lever *p*, depresses the latter to its full extent and feeds the paper a distance to denote the end of a sentence. In case the lever *p* should be depressed its full extent and it is desired to shorten the length of paper-feed the pawl *n* is lifted out of the ratchet-teeth 8 by the swinging finger and pin *x* that is actuated by the slide and key *w*, so that as the lever *p* rises the pawl will go forward and take the ratchet-teeth, but only move the feed-roller a short distance.

I claim as my invention—

1. Perforations for dashes in telegraphic transmitting-paper composed of two small and an intermediate large perforation, as specified.

2. A perforating mechanism composed of three punches in combination with two keys, arranged substantially as specified, so that all

three punches will be actuated by one key and only one by the other key, as set forth.

3. A feeding-roller actuated by a lever and pawl in combination with the perforating-punches and keys, and intervening mechanism for regulating the movement of the lever in proportion to the length of feed-movement required for the paper.

4. The notched slide *t* in combination with the lever *p* and keys for spacing the distance between the perforations, substantially as set forth.

5. The finger *x* actuated by the key *w* in combination with the pawl *n* and paper-feeding lever *p*, substantially as set forth.

Signed by me this 15th day of March, 1872.

T. A. EDISON.

Witnesses:

GEO. T. PINCKNEY,

CHAS. H. SMITH.